FIG. 1

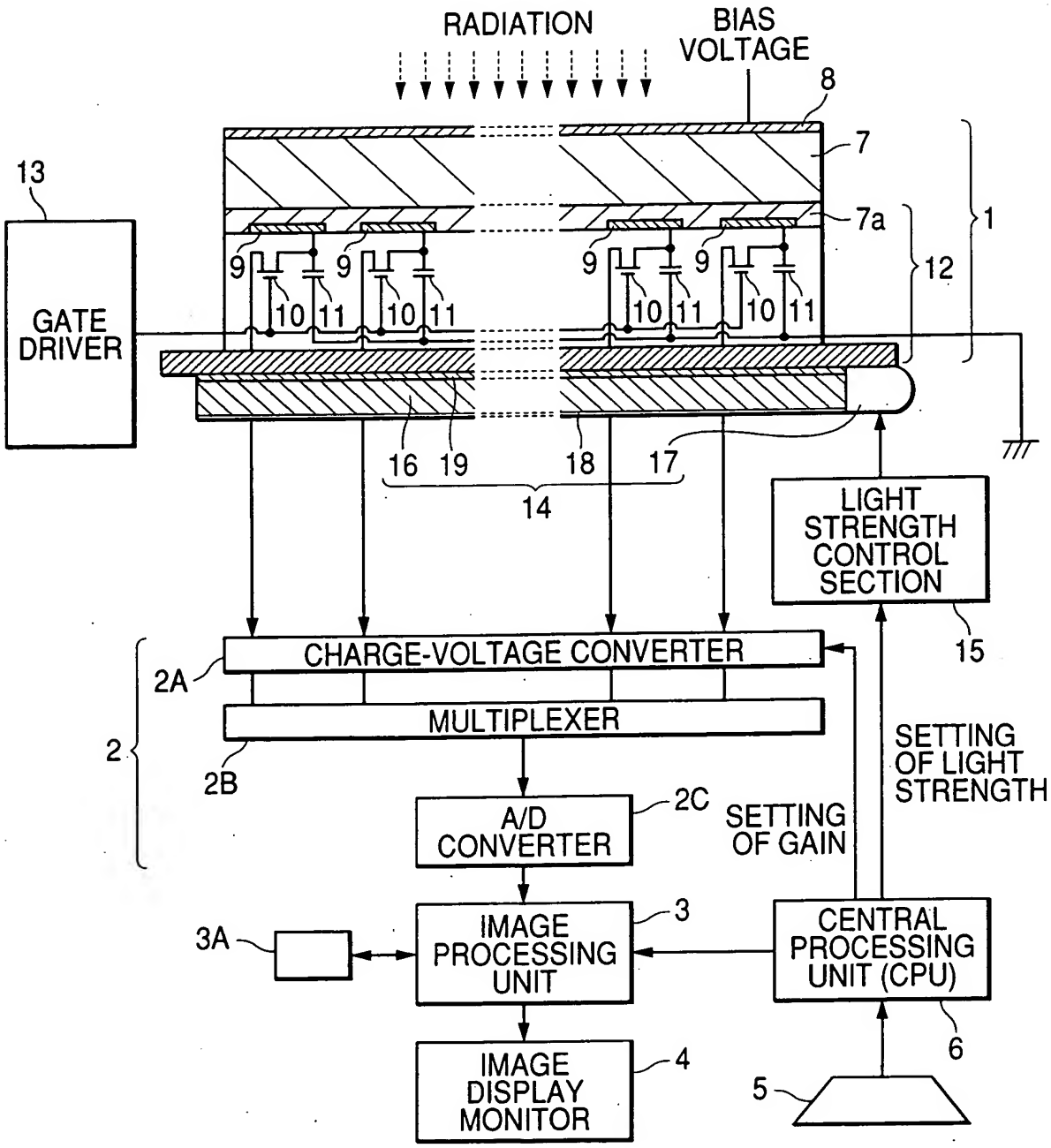


FIG. 2

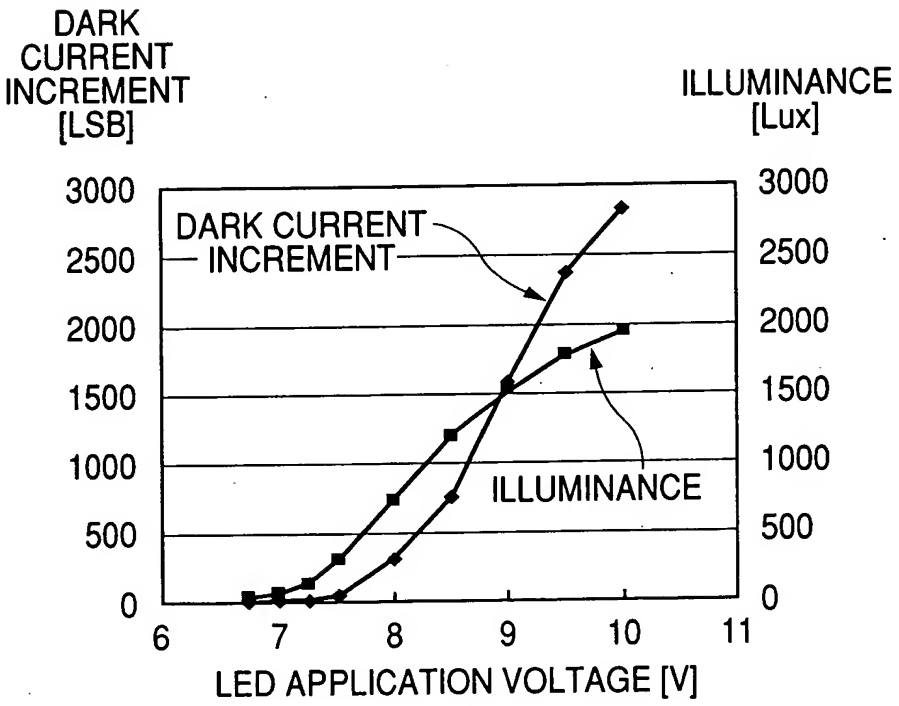

DARK CURRENT INCREMENT [LSB]
ILLUMINANCE [Lux]
3000
2500
2000
1500
1000
500
0
DARK CURRENT INCREMENT
ILLUMINANCE
6
7
8
9
10
11
LED APPLICATION VOLTAGE [V]

FIG. 3

| LED APPLICATION VOLTAGE (V) | | 6.75 | 7 | 7.25 | 7.5 | 8 | 8.5 | 9 | 9.5 | 10 |
|---|---|---|---|---|---|---|---|---|---|---|
| ILLUMINANCE [Lux] | | 6 | 10 | 22 | 57 | 320 | 760 | 1580 | 2370 | 2840 |
| DARK CURRENT INCREMENT [LSB] | | 34 | 60 | 147 | 312 | 740 | 1207 | 1520 | 1780 | 1950 |
| DECREASING RATE OF DYNAMIC RANGE | GAIN 30 | 0.43% | 0.75% | 1.8% | 3.9% | 9.3% | 15% | 19% | 22% | 24% |
| | GAIN 20 | 0.29% | 0.50% | 1.2% | 2.6% | 6.2% | 10% | 13% | 15% | 16% |
| | GAIN 10 | 0.14% | 0.25% | 0.61% | 1.3% | 3.1% | 5.0% | 6.3% | 7.4% | 8.1% |
| | GAIN 5 | 0.07% | 0.13% | 0.31% | 0.65% | 1.5% | 2.5% | 3.2% | 3.7% | 4.1% |
| | GAIN 2 | 0.03% | 0.05% | 0.12% | 0.26% | 0.62% | 1.0% | 1.3% | 1.5% | 1.6% |
| | GAIN 1 | 0.01% | 0.03% | 0.06% | 0.13% | 0.31% | 0.50% | 0.63% | 0.74% | 0.81% |

FIG. 4

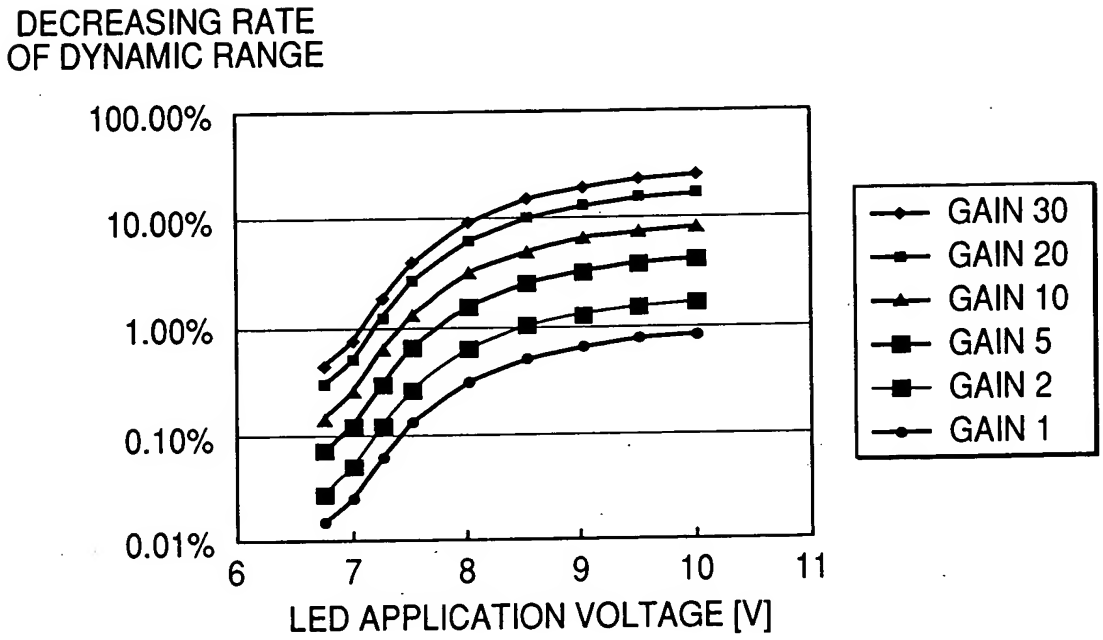

DECREASING RATE
OF DYNAMIC RANGE
100.00%
10.00%
1.00%
0.10%
0.01%
6
7
8
9
10
11
LED APPLICATION VOLTAGE [V]
GAIN 30
GAIN 20
GAIN 10
GAIN 5
GAIN 2
GAIN 1

FIG. 5

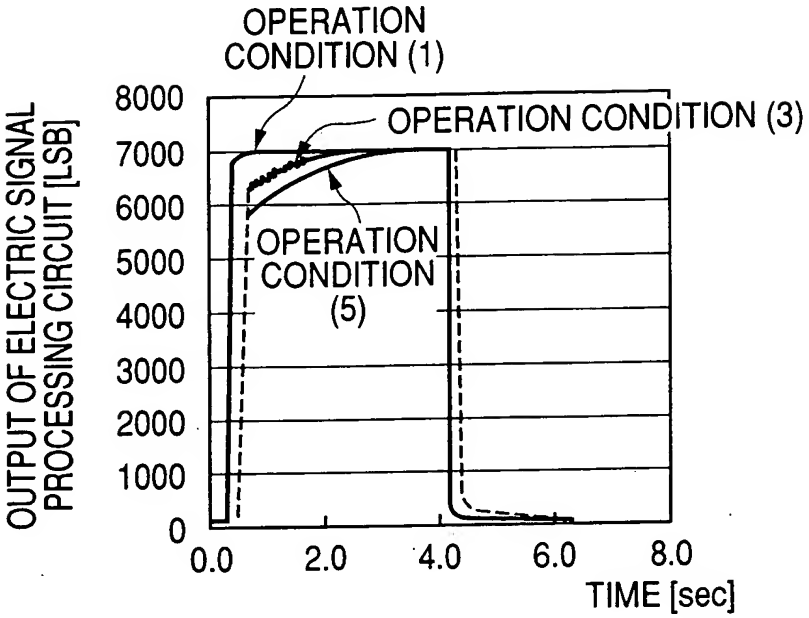

OPERATION CONDITION (1)
OPERATION CONDITION (3)
OPERATION CONDITION (5)
OUTPUT OF ELECTRIC SIGNAL PROCESSING CIRCUIT [LSB]
8000
7000
6000
5000
4000
3000
2000
1000
0
0.0
2.0
4.0
6.0
8.0
TIME [sec]

FIG. 6

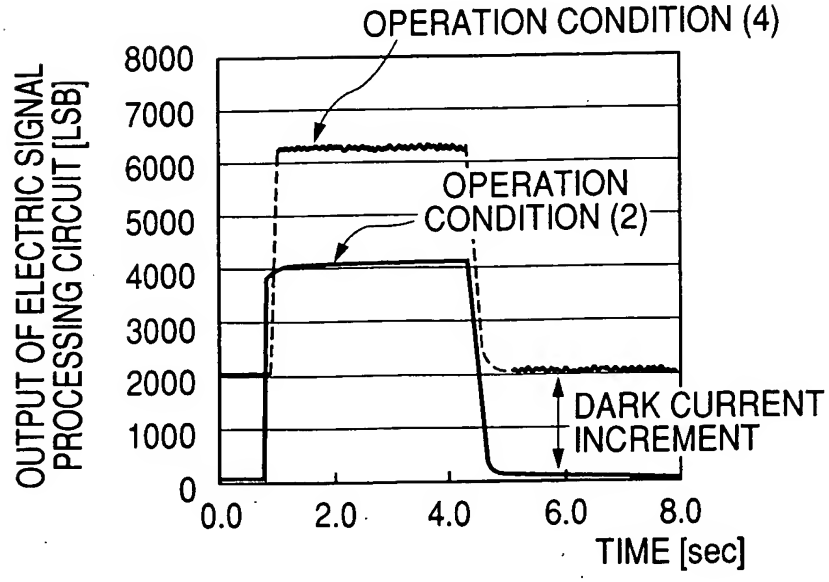
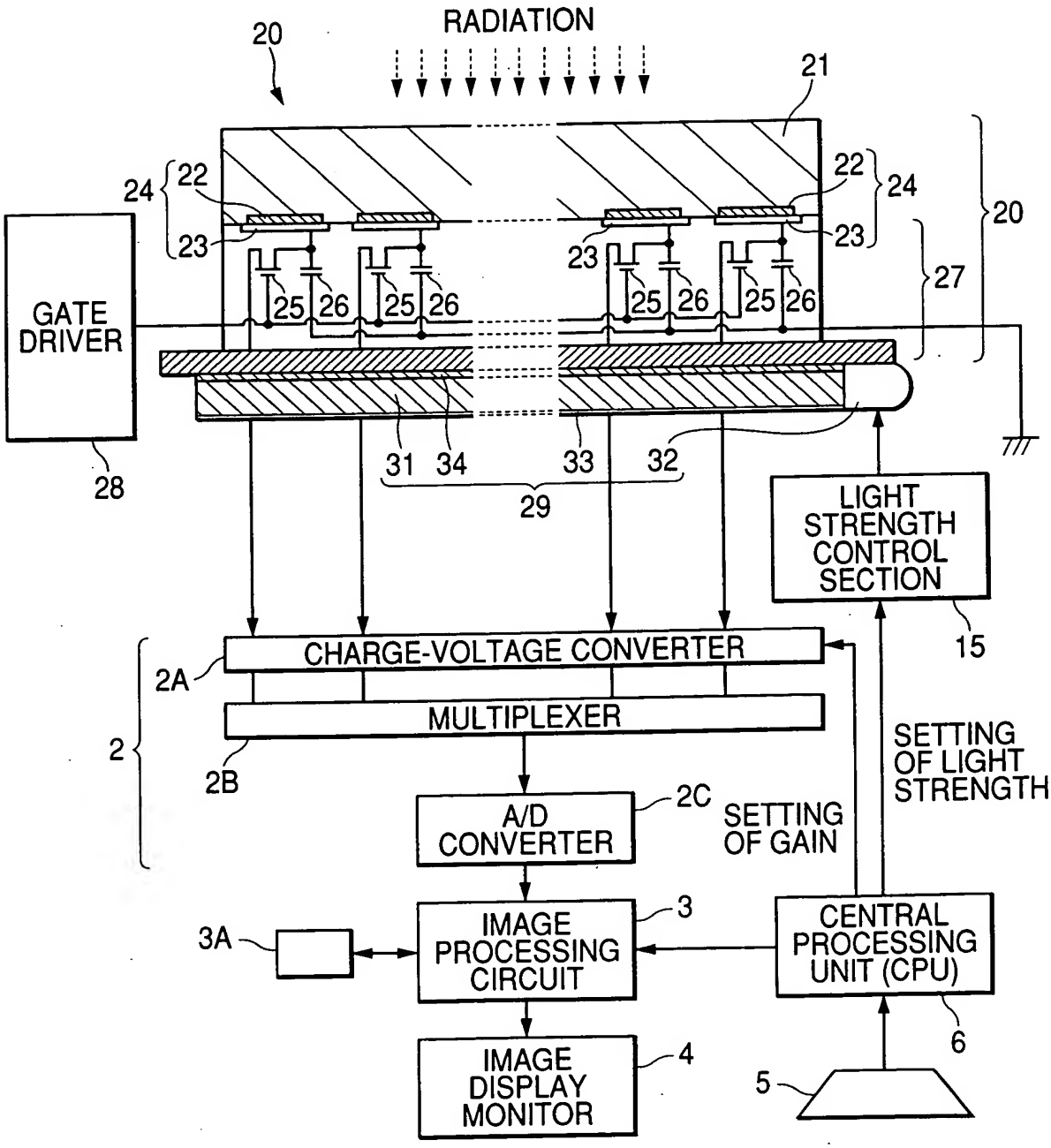

OPERATION CONDITION (4)
OPERATION CONDITION (2)
DARK CURRENT INCREMENT
OUTPUT OF ELECTRIC SIGNAL PROCESSING CIRCUIT [LSB]
8000
7000
6000
5000
4000
3000
2000
1000
0
0.0
2.0
4.0
6.0
8.0
TIME [sec]

FIG. 7


RADIATION
20
21
22
24
23
25
26
27
GATE DRIVER
28
31
34
33
32
29
LIGHT STRENGTH CONTROL SECTION
15
CHARGE-VOLTAGE CONVERTER
2A
MULTIPLEXER
2
2B
A/D CONVERTER
2C
SETTING OF GAIN
SETTING OF LIGHT STRENGTH
3
3A
IMAGE PROCESSING CIRCUIT
CENTRAL PROCESSING UNIT (CPU)
6
IMAGE DISPLAY MONITOR
4
5